

# Fact Sheet



## For Final Renewal Permitting Action Under 45CSR30 and Title V of the Clean Air Act

Permit Number: **R30-10700001-2010 (Part 2 of 14)**

Application Received: **November 14, 2008**

Plant Identification Number: **10700001**

Permittee: **E. I. du Pont de Nemours and Company**

Facility Name: **Washington Works**

Business Unit: **Fluoropolymers**

Mailing Address: **P. O. Box 1217, Washington, WV 26181-1217**

---

Physical Location:	Washington, Wood County, West Virginia
UTM Coordinates:	442.368 km Easting • 4,346.679 km Northing • Zone 17
Directions:	From I-77, take the Route 50 bypass around Parkersburg towards Ohio. Take the last exit prior to the bridge exit from the Route 50 Bypass onto DuPont Road. At the light turn left onto DuPont road. The facility is on the right approximately ½ miles from the turn.

---

### Facility Description

Within the Fluoropolymers Business Unit, there are the following Fluoroproduct production areas: C1P, C2, C3, T1-T4 and T7, T5, and T6. Each area produces a product or family of products by varying operating conditions and small adjustments to raw material ratios or material feed rates. The following is a general description of the operations in each of the Fluoroproduct production areas within the Fluoropolymers Business Unit.

#### C1P Area

Within the "C1P" area of DuPont Washington Works is a process capable of producing a variety of products in dispersion, flake and cube form. These products are made from fluoromonomers produced at the Washington Works Facility along with monomers from outside sources. The main product from this process is TEFLON® PFA.

## **C2 Area**

The C2 Area manufactures fluoropolymer resins by precharging fluoromonomers into reactors along with demineralized water. Aqueous solutions of catalyst salts are then pumped into the reactors to initiate polymerization. Additional fluoromonomers are fed into the reactors as the reaction proceeds. Unreacted fluoromonomers are vented to recycling facilities at the end of the reaction. The remaining fluoropolymer and water slurry is pumped to agglomerators that mechanically separate the fluoropolymer from the water. Alternatively, the reactor output may be sent to facilities which concentrate the dispersion to higher solids and package the dispersion for sale. From the agglomerators, the polymer is conveyed to devices where water and other low boiling compounds are removed prior to extrusion. The polymer is then converted to pellets via an extrusion process. The pellets are hot air sparged to remove additional traces of miscellaneous volatile fluorocarbons, elutriated to remove traces of polymer fines and packaged for distribution.

## **C3 Area**

The C3 area manufactures various molecular weight Telomers, which are short, straight chain carbon-fluorine compounds. Telomer products are most commonly made up of the short chain compounds with four to fourteen carbons. There are several recipes, one of which is selected to make a desired product. All recipes perform similarly in that:

- Lower molecular weight (MW) Telomers are added to a reactor.
- Monomer and other raw materials are added and reacted to form more lower MW Telomers and to convert lower MW Telomers to higher MW Telomers.
- At the end of reaction, the reaction mass is transferred to distillation which is used to separate the different MW Telomers. Lower MW Telomers are put into hold tanks for re-use in the reactor. Higher MW Telomers remain in the distillation pot and become Telomer product.
- The Telomer product is filtered and transferred to product storage tanks.
- The finished Telomer product is loaded into tank trailers for shipment.

## **T1-T4, and T7 Areas**

The T1-T4, and T7 areas produce final products fluoromonomers tetrafluoroethylene (TFE) and hexafluoropropylene (HFP); an intermediate, perfluorocyclobutane; and byproducts hydrogen chloride (HCl, aqueous) and calcium fluoride (CaF<sub>2</sub>, solid). The production facility is divided into the following sections: T1-TFE Synthesis, T2-TFE Refining, T3-HFP Synthesis, T4-HFP Refining, and T7-Utilities.

Fluorocarbons are reacted by pyrolysis in the T1 area and the products are separated to form crude TFE and recovered byproducts. TFE is refined in the T2 area. In-process materials and intermediates are reacted by pyrolysis in the T3 area to form crude HFP that is then refined in the T4 area. The T7 area is comprised of several utilities, including: refrigeration and cold brine supply; the unit vacuum systems for maintenance clearing of equipment; waste acid neutralization; and the thermal converter. The thermal converter combusts fluorine-containing byproduct gases from the T1-T4 process areas and from polymerization operations in the C1P, C2, C3, and T6 areas; and from two different non-hazardous fluorine-containing liquid streams to produce aqueous hydrogen fluoride (HF) which is reacted with slaked lime (calcium oxide or CaO) to form CaF<sub>2</sub>.

## **T5 Area**

The T5 area produces fluoropolymer resin. The basic processes used are polymerization, drying, and modification. The resin is produced by water based emulsion polymerization in one of two reactor units. Water, monomer (primarily tetrafluoroethylene), process aids, and other minor ingredients are introduced to the reactor. The reaction starts under elevated pressure, but proceeds to an endpoint at sub-ambient pressure. The resin is removed as slurry and is stored in one of several tanks pending further treatment and drying. The polymer slurry is processed and dried. The wet polymer passes through one of two dryers. Emissions from either dryer pass through cyclone separators to recover particulate matter. Both cyclone systems employ a water spray to improve effectiveness. The

material recovered from the cyclones is returned to the process. Dried resin is transferred to a pack-out room where it is drummed using automated equipment. Air from the pack-out room is exhausted through a scrubber. The recovered material from the packout exhaust is not recycled to the process.

### **T6 Area**

The Teflon<sup>®</sup> T6 area produces TFE based homopolymers in four agitated batch reactors. The reaction takes place in an aqueous medium, and a milk white raw polymer dispersion in water is produced. A portion of the raw dispersion production is dried and sold as powder, and a portion is processed and sold as a finished aqueous dispersion.

Copolymer dispersion products are also made. A batch is started by adding water and other ingredients to the reactor. Polymerization takes place in the aqueous phase at high temperature and pressure. At the end of each batch, most of the unreacted material is recycled for reuse or sent to the thermal converter. Some products are made by partially concentrating the reactor output in a water/solids separation vessel where some of the water is removed. For product sold as fine powder, the material is dried at high temperature with subsequent removal of impurities. The dried product is cooled and packaged.

### **Emissions Summary**

<b>Fluoropolymers (Part 2 of 14) Emissions Summary [Tons per Year]</b>		
<b>Regulated Pollutants</b>	<b>Potential Emissions</b>	<b>2008 Actual Emissions</b>
Carbon Monoxide (CO)	21.401	10.07
Nitrogen Oxides (NO <sub>x</sub> )	33.6	12.64
Particulate Matter (PM <sub>2.5</sub> )	89.3	5.88
Particulate Matter (PM <sub>10</sub> )	188.49	5.94
Total Particulate Matter (TSP)	380.3	7.7
Sulfur Dioxide (SO <sub>2</sub> )	0.692	0.08
Volatile Organic Compounds (VOC)	5,761.1	107.37
Lead (Pb) <sup>1</sup>	0.01	0.0092
<i>PM<sub>10</sub> is a component of TSP.</i>		
<b>Hazardous Air Pollutants</b>	<b>Potential Emissions</b>	<b>2008 Actual Emissions</b>
Acetonitrile	0.055	0.0017
Bis (2-ethylhexyl) Phthalate (DEHP)	0.0015	0
Cadmium <sup>1</sup>	2.15 x 10 <sup>-5</sup>	2.15 x 10 <sup>-5</sup>
Chloroform	7.32	0.0047
Chromium Compounds	0.00015	3.85 x 10 <sup>-5</sup>
CrF <sub>3</sub>	0.034	0
Ethylene Glycol	0.01	0.0014
Hydrochloric Acid	3,380.8	2.13

<b>Fluoropolymers (Part 2 of 14) Emissions Summary [Tons per Year]</b>		
<b>Hazardous Air Pollutants</b>	<b>Potential Emissions</b>	<b>2008 Actual Emissions</b>
Hydrogen Fluoride	102.352	0.256
Methanol	1.26	1.25
Methylene Chloride	13.7	8.748
Methyl Tert Butyl Ether	0.01	$1.63 \times 10^{-5}$
Mercury <sup>1</sup>	$2.6 \times 10^{-5}$	$2.6 \times 10^{-5}$
Phosgene	$5.1 \times 10^{-8}$	$4.99 \times 10^{-8}$
Toluene	2.14	0.04
<i>Some of the above HAPs may be counted as PM or VOCs.</i>		
<b>Regulated Pollutants other than Criteria and HAP</b>	<b>Potential Emissions</b>	<b>2008 Actual Emissions</b>
Ammonium Perfluorooctanoate (APFO)	1.93	0.22
Fluorides	23.42	Included with HF emissions
Ozone Depleting Compounds (ODC)	2,511.54	45.04
Dioxins/Furans <sup>1</sup>	$7 \times 10^{-8}$	$6.97 \times 10^{-8}$

<sup>1</sup>Emissions from T7IME

### Title V Program Applicability Basis

Due to the facility-wide potential to emit over 100 tons per year of criteria pollutants, over 10 tons per year of an individual HAP, and over 25 tons per year aggregate HAPs, DuPont Washington Works is required to have an operating permit pursuant to Title V of the Federal Clean Air Act as amended and 45CSR30.

### Legal and Factual Basis for Permit Conditions

The State and Federally-enforceable conditions of the Title V Operating Permits are based upon the requirements of the State of West Virginia Operating Permit Rule 45CSR30 for the purposes of Title V of the Federal Clean Air Act and the underlying applicable requirements in other state and federal rules.

This facility has been found to be subject to the following applicable rules:

Federal and State:	45CSR2	Prevent and Control Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers.
	45CSR6	Open burning prohibited.
	45CSR7	Particulate matter and opacity limits for manufacturing sources.
	45CSR10	To Prevent and Control Air Pollution from the Emission of Sulfur Oxides.
	45CSR11	Standby plans for emergency episodes.

	45CSR13	Preconstruction permits for minor sources.
	45CSR18	Prevent and control emissions from Commercial and Industrial Solid Waste Incineration Units (CISWI).
	45CSR34	Emission Standards for Hazardous Air Pollutants.
	WV Code § 22-5-4 (a) (14)	The Secretary can request any pertinent information such as annual emission inventory reporting.
	45CSR§21-30	Control of VOC emissions from cold and solvent metal cleaning.
	45CSR30	Operating permit requirement.
	40 C.F.R. 61	Asbestos inspection and removal
	40 C.F.R. 62, Subpart XX	Approval and Promulgation of State Plans for Designated Facilities and Pollutants.
	40 C.F.R. 63, Subpart FFFF	Miscellaneous organic chemical manufacturing (MON) MACT.
	40 C.F.R. 63, Subpart ZZZZ	Reciprocating internal combustion engines (RICE) MACT.
	40 C.F.R. 63, Subpart EEEE	Organic liquids distribution (OLD) MACT.
	40 C.F.R. 63, Subpart GGGGG	Site remediation MACT.
	40 C.F.R. 63, Subpart NNNNN	Hydrochloric acid production MACT.
	40 C.F.R. 82, Subpart F	Ozone depleting substances
State Only:	45CSR4	No objectionable odors.
	45CSR§21-40	Control of VOC emissions
	45CSR27	Best Available Technology (BAT) for HAPs
	45CSR42	Greenhouse Gas Reporting

Each State and Federally-enforceable condition of the draft Title V Operating Permit references the specific relevant requirements of 45CSR30 or the applicable requirement upon which it is based. Any condition of the draft Title V permit that is enforceable by the State but is not Federally-enforceable is identified in the draft Title V permit as such.

The Secretary's authority to require standards under 40 C.F.R. Part 60 (NSPS), 40 C.F.R. Part 61 (NESHAPs), and 40 C.F.R. Part 63 (NESHAPs MACT) is provided in West Virginia Code §§ 22-5-1 *et seq.*, 45CSR16, 45CSR34 and 45CSR30.

## Active Permits/Consent Orders

Area	Permit or Consent Order Number	Date of Issuance	Permit Determinations or Amendments That Affect the Permit <i>(if any)</i>
All	R13-2617D	July 27, 2010	NA
C1P	R13-2365D	December 16, 2004	NA
C2	R13-1953G	June 28, 2007	NA
C3	R13-2391G	May 26, 2010	NA
T1, T2, T3, T4, and T7	R13-1823I	September 15, 2010	NA
T5	R13-1353D	March 26, 2010	NA
T6	R13-0815F	January 4, 2006	NA
C1P, C2, T5, T6, and T7	CO GWR-2001-019	November 15, 2001	R13-2365D, R13-1953G, R13-1823I, R13-1353D, and R13-0815F

Conditions from this facility's Rule 13 permit(s) governing construction-related specifications and timing requirements will not be included in the Title V Operating Permit but will remain independently enforceable under the applicable Rule 13 permit(s). All other conditions from this facility's Rule 13 permit(s) governing the source's operation and compliance have been incorporated into this Title V permit in accordance with the "General Requirement Comparison Table B," which may be downloaded from DAQ's website.

## Determinations and Justifications

### Title V Administrative Amendments/Minor Modifications/R13 Changes

The initial Title V Permit for R30-10700001-2003 (Part 2 of 14) was issued on May 12, 2004. Since then, the Title V permit has been modified as follows:

- 1) **R30-10700001-2003 (Part 2 of 14) - MM01 issued on May 16, 2005.** This minor modification incorporated four minor modification requests. The first request was received on May 27, 2004 and was for the installation of two new scrubbers (C1FSC3 installed in the C1P Area and C2DTC3 installed in the C2 Area) to reduce ammonium perfluorooctanoate (APFO) emissions and for the permanent removal of Ovens C1CA, C1CB, C1CC, and C1CD in the C1P Area. These changes were made in accordance with permits R13-2365C and R13-1953B, both issued on June 1, 2004.

The second request was received on November 1, 2004 and was for the removal of emission point C1FKE and the rerouting of APFO emissions from this emission point through scrubber C1FSC3. Through improvements in the operation of scrubber C1FSC3, the minimum water flow to the scrubber was reduced from 1.0 gpm to 0.3 gpm without any reduction in control performance. Actually, the overall claimed control efficiency for APFO and PM<sub>10</sub> through the combination of control devices C1FSC1, C1FSC2, and C1FSC3 was increased from 95% to 96%. These changes were made in accordance with R13-2365D, issued on December 16, 2004.

The third request was received on January 19, 2005 for the installation of emission unit C2KU to allow for the addition of new materials into one of the existing extruder lines. The installation of the new equipment was added under R13-1953C, issued on August 24, 2004. During the addition of new materials to the operation, emissions from the extrusion line were to be routed to the thermal converter (emission point T7IME) which was permitted under R13-1823B. The changes to the emission limits for T7IME in R13-1823B from the addition of new materials and equipment were to be submitted at a later date.

The fourth request was received on January 20, 2005 and included changes to the operating parameter ranges of control device T7IMC and allowed for the combustion of halogen containing VOC emissions from the C3 Area and control of hydrogen fluoride and other pollutants from emission unit C2ES in the C2 Area. Also, the methanol detoxification process T4GA and associated methanol storage vessel T4GC were removed, resulting in the deletion of emission points T4GAE, T4GCE, and T7ABE, and emission reductions from the removal of this equipment and the re-calculation of equipment leak emissions. All of these changes were made under R13-1823C, issued on November 30, 2004.

- 2) **R30-10700001-2003 (Part 2 of 14) – MM02 issued on August 30, 2005.** This minor modification was received on April 15, 2005 and May 6, 2005 and addressed changes approved under R13-2391C (issued on August 16, 2004) and R13-1823D (issued on May 26, 2005). R13-2391C allowed for an increase in capacity while reducing emissions through the routing of emission streams through existing control devices. As a result, the Section 1.0 Emission Units Table and Conditions 7.1.1, 7.1.2, 7.1.3, 7.1.4, 7.1.7, 7.2.1, 7.3.2, 7.3.3, 7.3.4, 7.3.6, 7.3.8, and Appendix D were updated to incorporate the R13-2391C changes. R13-1823D increased the annual PM<sub>10</sub> emission limit for T7IME, improved monitoring for control devices T7IMC and T2ERE, and clarified visual monitoring requirements for T7JJE and T7AKE. Conditions 8.1.1, 8.1.2, 8.1.4, 8.1.5, 8.1.12, 8.1.13, 8.1.16, 8.1.17, 8.2.1, 8.4.4, 8.4.7, and Appendix E were updated to incorporate the R13-1823D changes. In addition to changes associated with R13-2391C and R13-1823D, the Appendix A and Appendix C recordkeeping forms were revised to match the R13-2365D and R13-1953C Attachments.
- 3) **R30-10700001-2003 (Part 2 of 14) – MM03 issued on November 30, 2005.** This minor modification request was received on August 17, 2005 and addressed changes which were approved under R13-1353C (issued on August 22, 2005). R13-1353C corrected calculation errors of the emission estimates used as the basis for the R13-1353B emission limits; increased the production rate in the T5 Area; revised the condition which limited the exit vent temperature at the Vent Condenser (Emission Point T5HKC) to limit the brine temperature of the condenser instead; and removed Emission Point T5HJE from the permit because the Packout Room Scrubber associated with this emission point is for indoor air quality improvement and not for process emission reduction.
- 4) **R30-10700001-2003 (Part 2 of 14) – MM04 issued on May 4, 2006.** This permit revision included three minor modification requests. The first request was received on December 5, 2005 and addressed changes approved under R13-1953D, issued on November 16, 2005. R13-1953D allowed for multiple changes in the C2 Area, including the following: an increase in the overall control device efficiency of C2DTC2, C2EHC2, C2DWC2, and C2DTC3 to minimize APFO in the operations deliverables; introduction of new materials (including printing inks, and makeup and wash solutions used in the C2 process) and their associated net emissions to the Fluoropolymers area; changes to the operating parameters of tank C2EC and emission point C2DAE, including C2EC being retrofitted to service the C2 area as a temporary holding spot until contents can be properly disposed of in sump C2KQ; revision of the emission rate and/or testing requirements for C2DTC2, C2DWC2, C2EHC2, and C2DTC3 due to the completion of the initial stack tests and subsequent results; revision of the emission rates for C2EVE due to changes in printer ink, makeup solution, and wash solution used in the Packout Area; and revision of the maximum production rate on C3EH without an increase of the total combined maximum production rate from C2EH, C2DT, and C2DW.

The second request was received on December 21, 2005 and addressed changes approved under R13-0815F, issued on January 4, 2006. R13-0815F revised emission calculations for several sources; identified and established emission limits for several emission sources that were previously described as having insignificant emissions; increased production from the dryers; increased the maximum inlet gas flow to the Packed Bed Scrubber (T6IFC) and Deep Bed Scrubber (T6IZC); established permit limits for two vents which have APFO emissions and which were previously identified as insignificant; and increased the APFO control efficiency for T6IZC.

The third request was received on March 20, 2006 and addressed changes approved under R13-1953E, issued on February 2, 2006. R13-1953E increased the permitted annual emission limits for VOC from emission point C2DAE and for VOC and HAP emissions from C2EVE. In addition to the emissions increase, R13-1953E also approved the installation of four (4) new vessels (Feed Tank C2KW, two new ion exchange columns, and Storage Tank C2KX) as part of DuPont's "Dispersion Reformulation Program" intended to reduce the amount of APFO in their final products.

- 5) **R30-10700001-2003 (Part 2 of 14) – AA01 issued on September 13, 2006.** The purpose of this administrative amendment was to update the MACT placeholder language in Conditions 8.1.18 and 8.1.20, such that instead of six months prior to the compliance date of the MACT, the date the application for a significant Title V permit modification was required coincided with the submittal of the Notification of Compliance Status.
- 6) **R30-10700001-2003 (Part 2 of 14) – MM05 issued on November 28, 2006.** This minor modification incorporated changes from R13-1953F (issued on May 31, 2006), R13-1823E (issued on August 3, 2006), and R13-2617A (issued on September 7, 2006); and modified the compliance date in Condition 3.1.13 for 40 C.F.R. 63, Subpart EEEE.

The following changes were approved under R13-1953F: revision of the emissions estimates for C2KU to reflect the current equipment specifications and increased operational parameters; modification of C2EZ from an aborted batch trailer loading station to a raw material truck unloading station; introduction of new process chemical, along with process rate changes to the associated No.1 and No. 2 process tanks; revision of C2KGE, C2KHE, and C2KIE to reflect the reduction in emissions associated with the modification of the average slab temperature to comply with the upcoming MON MACT; rerouting of emissions from C2KLE to control device C2DBC to comply with the upcoming MON MACT; replacement and upgrading of Baghouse C2KPC to comply with the upcoming MON MACT; revision of the operational description of C2DJ to have an alternate function of receiving wastewater from C2DG; removal of the Rule 21 requirements and replacement with a reference to existing permit R13-2617 for sources C2EC, C2DP, C2DR, C2DX, D2EE, C2EP-1, C2DC, and C2DG; an increase to the number of allowable de-inventories of C2DX and D2DY from 50 per year to 150 per year to account for de-inventorying the lines as well as the removal of the valve to clean and remove build up from the process.

The purpose of R13-1823E was to re-route PFA ventbacks to the Mixed Gas Holder (T1GN) for the purpose of TFE recovery rather than disposal of un-reacted monomers from polymerization equipment within the "T" process area. As a result, a new Acetonitrile emission limit (emissions generated by Mixed Gas Holder Stack T1GNE and South Central Vent Stack T7XIE) was added to the maintenance emission.



R13-2617A was a site-wide permit which superseded and replaced the two existing Consent Orders (CO-R27-92-19 and CO-R21-97-47). The permit provided the site-wide applicable conditions and requirements based on rules 45CSR21 and 45CSR27. This minor modification included the requirements and conditions of R13-2617A in Section 3 of the Title V Permit; streamlined several existing requirements of the Title V Permit with the new requirements; added APPENDIX H which lists all the sources in the Fluoropolymer Production Unit subject to 45CSR21 and 45CSR27; and streamlined several existing Attachments with the new APPENDIX H.

- 7) **R30-10700001-2003 (Part 2 of 14) – MM06 issued on October 16, 2007.** This minor modification permit incorporated changes from R13-1953G (issued June 28, 2007), R13-2617C (issued July 13, 2007), R13-2391D (issued August 1, 2007), and R13-2391E (issued August 27, 2007); added the Active R13, R14, and/or R19 Table in Section 1.2 of the Title V permit; and revised the Title V appendices to include all of the most recently approved record keeping forms and tables from the active R13 permits.

The purpose of R13-2617C was to update the Attachment A listing of 45CSR21 and 45CSR27 sources.

R13-1953G included the following changes: the permanent shutdown of Line #1 which resulted in the removal of Reactor (C2DC), Dryer (C2DT), Oven (C2DB), Oven (C2DF), Conveyor System (C2KE), Conveyor System (C2KF), Tower (C2KG), Tower (C2KH), Process Equipment (C2DL), Hopper (C2KK), Hood (C2DZ), Dryer (C2KA), Elutriator (C2DN), Bin (C2DD), Process Equipment (C2KM), Bagfilter (C2DTC1), Scrubber (C2DTC2), and Cyclone (C2DLC); an increase in the production rate for Line #3 to handle the production needs that were previously addressed by Line #1, resulting in an increase in emissions for several emission points; increased VOC emission limits for emission points C2ETE and C2KDE due to analytical data on dissolved gas concentrations in polymer cubes which showed higher VOC concentrations than previously used to calculate emissions; discontinued use of C2ESC1 and C2ESC2 as control devices; an increase in the PM<sub>10</sub> control efficiency for control device C2DSC from 99.9% to 99.99% and as a result, a reduction in the PM<sub>10</sub> emissions for emission point C2DSE; increase in the PM<sub>10</sub> control efficiency for control device C2DTC3 from 96% to 97% which also reduced PM<sub>10</sub> emissions for emission point C2DTE; an increase in VOC and HF emissions for emission points C2DHE and C2EBE due to an increase in the estimated rework percentage level on Line #2; addition of an alternate operating scenario resulting in an increase in Line #2 batch size, but no increase in the permitted emissions for Line #2 and no impact on Line #3 emissions; rounding of all PM<sub>10</sub> and VOC emission limits to no more than one digit past the decimal for the hourly emissions and no more than two digits past the decimal for annual emissions; rounding of HAP limits to no more than two digits past the decimal for both hourly and annual emissions; addition of PM<sub>10</sub> emission limits for C2DJE, C2DKE, C2EGE, and C2EUE; and a change to the speciated HAP emission limits for Di-Sec-Octyl Phthalate, Methanol, and Chromium III Compounds from emission point C2EVE to a total HAP limit in order to provide more operational flexibility for changing printing inks.

R13-2391D proposed improved monitoring and recordkeeping for scrubber C3HGC equivalent to that used for sources venting to a similar scrubber, C3HPC. The improved automated monitoring will allow better determination of the remaining capacity of the scrubber liquor. In addition to revising the recordkeeping requirements specified in condition B.3 (7.3.3 of the Title V permit), former Attachment C was omitted and former Attachment D was renamed Attachment C. When R13-2391D was approved to change the monitoring of C3HGC to a stricter monitoring procedure, the recordkeeping form in Attachment A was not updated accordingly. The purpose of R13-2391E was to insert two rows in Attachment A for scrubber C3HGC to allow the facility to document the monitoring parameters for this scrubber.

- 8) **R30-10700001-2003 (Part 2 of 14) – MM07 issued on May 28, 2008.** The purpose of this minor modification was to incorporate changes permitted under R13-1823F (issued on December 18, 2007), R13-1823G (issued on January 24, 2008), and R13-1823H (April 1, 2008); and also to incorporate the applicable recordkeeping requirements of 40 C.F.R. 63, Subpart GGGGG pursuant to 40 C.F.R. §63.7881(c)(3).

The following changes were approved under R13-1823F: modified the requirement to monitor and record the Maximum Flue Gas Flow Rate at the Thermal Converter Scrubber (T7IMC) to allow the units of measure to be pounds per hour (pph) rather than standard cubic feet per minute (scfm); revised and updated the SO<sub>2</sub> hourly and annual limits for T7IME; updated the permit to more accurately describe chromium (Cr) content in the FEP vent stream identified as Reactor Vent C2ES; clarified the 45CSR18 (CISWI) stack testing requirement language regarding required frequency; and updated the source description for T1GNE to include fugitive VOC emissions.

In R13-1823G, the omitted requirement for emission point T7IME regarding emission point modeling parameters was added as condition 4.1.20. Since these emission point modeling parameters were already contained in the Title V permit as condition 3.1.15, no substantive change in the Title V permit was needed. Also, T1BA was removed from the Emission Units Table in Section 1.0.

The following changes were made to the Title V permit per the changes approved under R13-1823H: permit condition 8.1.7 for the TFE/CO<sub>2</sub> System Vents (T2EX) was revised to describe two (2) vent downs per week to the Thermal Converter (T7IME); and condition 8.1.8 was revised to allow maintenance venting from storage tank T1LF to be routed to control device T1XIC, the South Stillhouse Scrubber, as an alternative to the current device T2ERC.

- 9) **R30-10700001-2003 (Part 2 of 14) – MM08 issued on August 12, 2008.** This minor modification permit incorporated changes from R13-2391F, issued June 9, 2008. In R13-2391F, DuPont proposed the addition of a new Line 3 product filter C3JA to existing Line 2 emission point C3IPE; the addition of an operating scenario to allow continued use of existing Line 3 filter C3IQ in the event that filter C3JA must be taken out of service for a period of time; and an increase in the hourly and annual emission limits for emission points C3IPE and C3IQE in the event that both Line 3 filters C3JA and C3IQ are operated in parallel at maximum capacity for a full year.
- 10) **R30-10700001-2003 (Part 2 of 14) – MM09 and R13-1353D.** R13-1353D, approved on March 26, 2010, is a Class I administrative update which replaces the individual hourly and annual emission limits for emission sources T5HC, T5HD, T5HM, T5HN, T5HP, T5HW, and T5HX with one set of hourly and annual emission limits specific to emission point T7XIE through which all of these emission sources are routed. Also, footnote 2 was revised so that it references “the latest version of Permit R13-1823” instead of providing the number of the latest version of R13-1823.

The changes approved under R13-1353D and requested in the Title V minor modification application R30-10700001-2003 (Part 2 of 14) – MM09 were included in this Title V permit renewal and not in a separate Title V minor modification permit.

- 11) **R30-10700001-2003 (Part 2 of 14) – MM10 and R13-2391G.** Class I administrative update R13-2391G, approved on May 26, 2010, modified the recordkeeping requirements for scrubbers C3HGC and C3HPC (conditions B.3 and B.4 in R13-2391G and 6.4.3 and 6.4.4 in the Title V permit renewal) to accommodate the change from batch operation to continuous operation for a portion of the process unit. Other changes to the process unit dealing with the conversion from batch to continuous operation were approved on February 12, 2010 under PD10-008, but they had no effect on any R13 or Title V permit conditions.

The changes approved under R13-2391G and requested in the Title V minor modification application R30-10700001-2003 (Part 2 of 14) – MM10 were included in this Title V permit renewal and not in a separate Title V minor modification permit.

- 12) **R13-1823I.** This Class I administrative update was approved on September 15, 2010 and involved changes to the control device operating limits table in Condition 4.1.5 (Condition 7.1.5 of the Title V Permit) so there would no longer appear to be conflicting requirements in the Title V permit between this table and control device operating limits from CISWI 111(d)/129 and 45CSR18, 40 C.F.R. 63, Subpart NNNNN, and 40 C.F.R. 63, Subpart FFFF. In order to eliminate the possible conflicting monitoring requirements, Table

4.1.5 (Condition 7.1.5 of the Title V Permit) was revised so that monitoring already required under CISWI 111(d)/129 and 45CSR18 for the Thermal Converter (T7IMC); 40 C.F.R. 63, Subpart NNNNN for the North Tank Farm Scrubber (T2ERC) and Thermal Converter (T7IMC); and 40 C.F.R. 63, Subpart FFFF for the Thermal Converter (T7IMC) and South Stillhouse Scrubber (T7XIC) was referenced in each rule's monitoring requirements and no longer specified in the table. Since the applicable requirements from 40 C.F.R. 63, Subpart NNNNN and 40 C.F.R. 63, Subpart FFFF were not included in the previous permit, these conditions were added to R13-1823I. Additional requirements from CISWI 111(d)/129 and 45CSR18 were added as well.

In addition, the following minor changes were also included in R13-1823I: 1) T7JC was removed, the control device for T7JD was changed from T7JCC to T7JDC, and the emission point for T7JD was changed from T7JCE to T7JDE. In addition, all other references to T7JCE in the permit and attachments were changed to T7JDE; 2) T7AKE was added to the list of affected emission units in Conditions 4.1.12 and 4.1.13 (Conditions 7.1.12 and 7.1.13 of the Title V Permit); 45CSR21 and 45CSR27 requirements were added back into the permit after being inadvertently left out of the R13-1823F revision; 4) Condition 4.2.1 was slightly revised to include Method 9 requirements for the Thermal Converter (T7IME) instead of 45CSR7A (Condition 7.2.1 of the Title V Permit); 5) The recordkeeping requirements in 4.4.6, 4.4.7, and Attachment C of R13-1823I were revised to be consistent with the new control device operating parameters monitoring approach (Conditions 7.4.3 and 7.4.4 of the Title V Permit).

#### **Other Changes to the Title V Permit**

- 1) **Removal of the C1-T Area and permit conditions from R13-0822A.** In their Title V permit renewal application, DuPont indicated that R13-0822A for the C1-T Area is inactive. Also, they did not include any emission units or requirements for the C1-T Area.
- 2) **Removal of Consent Order CO-R18-C-2003-1 conditions.** DuPont was notified by letter, dated December 16, 2004, that since the Compliance Program in Section III of Consent Order CO-R18-C-2003-1 was satisfactorily completed, the consent order was terminated pursuant to Section IV, Item 8.
- 3) **Removal of equipment from the Emission Units Table in Section 1.1.** The following equipment was removed from the Title V Emission Units Table in Section 1.1 because it is no longer in service: C1CG, C1CH, C2KT, C2DI, C2KL, C2DH, C2DM, C2DO, C2EB, C2KJ, C2KI, C2KN, C3IP, T5HQ, and T5HR. However, the R13 requirements for this equipment were left in the Title V permit because the R13 permits have not been updated to remove these emission sources.

#### **Addition of Applicable Federal Regulations**

- 1) **Updated the commercial and industrial solid waste incineration (CISWI) requirements.**

Since the final compliance date of September 30, 2003 has already passed and the initial performance testing has been conducted (initial testing conducted on March 16-17, 2004; testing to demonstrate compliance with all CISWI regulated pollutants conducted on March 20-21, 2006 and May 24, 2006), the Title V permit was updated and includes the operating parameter limits in Condition 7.2.2.

DuPont is required to install, calibrate (to manufacturer's specifications), maintain, and operate devices to continuously monitor the following operating parameters for the thermal converter and associated scrubber (T7IMC): 1) Maximum charge rate which is calculated as 110 percent of the daily charge rate measured during the most recent performance test demonstrating compliance with all applicable emission limitations; 2) Minimum pressure drop across the wet scrubber which is calculated as 90 percent of the average pressure drop across the wet scrubber measured during the most recent performance test demonstrating compliance with the particulate matter emission limitations; 3) Minimum scrubber liquor flow rate which is calculated as 90 percent of the average liquor flow rate at the inlet to the wet scrubber measured during the most recent performance test demonstrating compliance with all applicable emission limitations; and 4)

Minimum scrubber liquor pH which is calculated as 90 percent of the average liquor pH at the inlet to the wet scrubber measured during the most recent performance test demonstrating compliance with the HCl emission limitation. The compliance testing which demonstrated compliance with all applicable emission limitations was conducted on March 20-21, 2006 with an additional test for lead on May 24, 2006. The most recent performance test which demonstrated compliance with the HCl and particulate matter emission limits was conducted on March 10, 2009. The following table provides the CISWI operating parameter limits for the thermal converter and associated scrubber (T7IMC):

Operating Parameter	Average Rate Measured During Compliance Testing	CISWI Operating Limit	Test Date Establishing Limit
Maximum charge rate	602 lb/hr	662 lb/hr	March 20-21, 2006 and May 24, 2006
Minimum pressure drop across the wet scrubber	33 in wc	29.7 in. wc	March 10, 2009
Minimum scrubber liquor flow rate	41.7 gpm	37.5 gpm	March 20-21, 2006 and May 24, 2006
Minimum scrubber liquor pH	7.18	6.46	March 10, 2009

Annual performance tests for particulate matter, hydrogen chloride, and opacity to determine compliance with the emission limits specified in 7.1.15 are required. If there is test data for at least 3 years, and all performance tests for the pollutant (particulate matter, hydrogen chloride, or opacity) over 3 consecutive years show compliance with the emission limits specified in 7.1.15, a performance test for that pollutant does not have to be conducted for the next 2 years and must be conducted during the third year and no more than 36 months following the previous performance test. If the CISWI unit continues to meet the emission limitations for particulate matter, hydrogen chloride, and opacity, performance tests for these pollutants can be conducted every third year. However, if a performance test shows a deviation from an emission limitation for particulate matter, hydrogen chloride, or opacity, performance testing must be conducted annually. Since DuPont conducted performance tests in 2004, 2005, 2006 and showed compliance with the emission limits, they were not required to conduct a performance test until 2009. A performance test was conducted on March 10, 2009 which showed compliance with the particulate matter, hydrogen chloride, and opacity limits specified in 7.1.15, therefore the next performance test for these pollutants must be conducted by March 10, 2012.

DuPont will be required to conduct a performance test for all CISWI regulated pollutants only if the feed stream is different than the feed streams used during the performance test used to demonstrate compliance, or upon the request of the Administrator.

- 2) **40 C.F.R. 63, Subpart EEEE – “National Emission Standards for Hazardous Air Pollutants: Organic Liquids Distribution (Non-Gasoline).”** The Fluoropolymers Business Unit’s applicable recordkeeping and reporting requirements under 40 C.F.R. 63, Subpart EEEE are addressed in 3.7.2.1, 7.4.9, 7.4.10, 7.4.11, 7.5.2, 8.4.5, 8.4.6, 8.4.7, and 8.5.1 of the Title V Permit.
- 3) **40 C.F.R. 63, Subpart FFFF – “National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing.”** The Fluoropolymers Business Unit is subject to the requirements of 40 C.F.R. 63, Subpart FFFF (MON MACT). In their Notification of Compliance Status (NOCS) Report, dated October 6, 2008, DuPont identified the following MON MACT affected sources in Fluoropolymers.

### Continuous Process Vents

For a gas stream to be defined under 40 C.F.R. §63.2550 as a continuous process vent, it must contain greater than 0.005 weight percent (50 ppm<sub>w</sub>) total HAP. For each gas stream identified as a continuous process vent, a determination is then made as to whether it is a Group 1 continuous process vent or a Group 2 continuous process vent. A Group 1 continuous process vent is defined by 40 C.F.R. §63.2550 as a continuous process vent for which the flow rate is greater than or equal to 0.005 standard cubic meter per minute, and the total resource effectiveness index value, calculated according to 40 C.F.R. §63.2455(b), is less than or equal to 1.9 at an existing source and less than or equal to 5.0 at a new source. A Group 2 continuous process vent is defined by 40 C.F.R. §63.2550 as a continuous process vent that does not meet the definition of a Group 1 continuous process vent. According to their NOCS Report, all continuous process vents in Fluoropolymers are Group 2.

### Batch Process Vents

A batch process vent is defined by 40 C.F.R. §63.2550 as a vent from a unit operation, or vents from multiple unit operations, within a process that are manifolded together into a common header, through which a HAP-containing gas stream is, or has the potential to be, released to the atmosphere. Examples of batch process vents include, but are not limited to, vents on condensers used for product recovery, reactors, filters, centrifuges, and process tanks. However, a batch process vent does not include emission streams from emission episodes that are undiluted and uncontrolled and contain less than 50 ppm<sub>v</sub> HAP. Also, a vent from a unit operation or a vent from multiple unit operations that are manifolded together, and have total uncontrolled HAP emissions less than 200 lb/yr are not a batch process vent. A Group 1 batch process vent is a batch process vent in a process for which the collective uncontrolled organic HAP emissions from all of the batch process vents are greater than or equal to 10,000 lb/yr at an existing source or greater than or equal to 3,000 lb/yr at a new source. A Group 2 batch process vent is a batch process vent that does not meet the definition of a Group 1 batch process vent. In their NOCS Report, DuPont identified the following batch process vents: C2ES, T1BW, T1BX, T1XC, and T1XD as batch process vents emitting Halogen HAP.

### Hydrogen Halide and Halogen HAP or HAP Metals for Continuous and Batch Process Vents

For each process vent (continuous and batch), DuPont was then required by 40 C.F.R. §63.2465 to determine and sum the uncontrolled hydrogen halide and halogen HAP emissions from each of the process vents within a process. If the collective uncontrolled hydrogen halide and halogen HAP emissions from the process vents within the process were greater than or equal to 1,000 lb/yr, then the permittee was required to reduce emissions in accordance with Table 3 of 40 C.F.R. 63, Subpart FFFF. In their NOCs Report, DuPont determined that batch process vents C2ES, T1BW, T1BX, T1XC, and T1XD have collective uncontrolled hydrogen halide and halogen HAP emissions from process vents (continuous and batch) greater than or equal to 1,000 lb/yr and are therefore subject to the requirements of 40 C.F.R. §63.2465 and Table 3 of 40 C.F.R. 63, Subpart FFFF. Table 3 of 40 C.F.R. 63, Subpart FFFF requires DuPont to reduce the collective hydrogen halide and halogen HAP emissions by  $\geq 99$  percent by weight or to an outlet concentration of  $\leq 20$  ppm<sub>v</sub> by venting through one or more closed-vent systems to any combination of control devices. In their NOCS Report, DuPont indicated they will be demonstrating compliance with these emission limits by routing emissions from C2ES, T1BW, T1BX, and T1XC to the thermal converter (T7IMC) and associated scrubber. The South Still House Scrubber (T7XIC) will be used to control emissions from T1XD.

DuPont used testing results from a March 2005 performance test to demonstrate compliance with the emission limits of Table 3 of 40 C.F.R. 63, Subpart FFFF. In their NOCS Report, dated October 6, 2008, DuPont established the following monitoring parameters for the thermal converter (T7IMC) and associated scrubber based on the results of the performance testing:

Thermal Converter – Scrubber (T7IMC)	Monitoring Frequency	Limit
Minimum Scrubber Effluent pH	Continuous	7.1
Minimum Scrubber Influent Liquor Flow	Continuous	40 gpm
Maximum Gas Stream Flow	Continuous	12,700 pph

On May 8, 2008, DuPont requested approval of alternative monitoring for the South Still House Scrubber (T7XIC) as an addendum to their precompliance plan for the MON MACT. DuPont wanted to monitor the water flow and temperature of the scrubber bottoms for T7XIC, instead of the pH of the scrubber effluent and the scrubber influent flow as specified in 40 C.F.R. §63.994(c). The request letter, dated May 8, 2008 was addressed to John Benedict, Director of DAQ; carbon copied to Judy Katz, Director of EPA Region III; and signed by David F. Altman, Sr. Environmental Control Consultant of DuPont Washington Works. DuPont did not receive a response to their request for alternative monitoring for T7XIC. On March 11, 2010, DuPont sent a petition to DAQ and EPA Region III requesting approval of alternative monitoring for the South Still House Scrubber (T7XIC). EPA Region III determined that the request was a minor alternative and could be approved by DAQ. DAQ approved the alternative monitoring request on June 16, 2010 with the following parameters to be monitored:

South Still House Scrubber (T7XIC)	Monitoring Frequency	Limit
Maximum Scrubber Temperature	Continuous	140 °F (60 °C)
Minimum Scrubber Liquor Circulation Rate	Continuous	200 gpm
Maximum Vent Flow Discharge Rate	Continuous	2,194 lb/hr

#### Storage Tanks

A storage tank is defined under 40 C.F.R. §63.2550 as a tank or other vessel that is used to store liquids that contain organic HAP and/or hydrogen halide and halogen HAP and that has been assigned to an MCPU, but it does not include vessels which store organic liquids that contain HAP only as impurities. A Group 1 storage tank is defined by 40 C.F.R. §63.2550 as a storage tank with a capacity greater than or equal to 10,000 gallons storing material that has a maximum true vapor pressure of total HAP greater than or equal to 6.9 kilopascals at an existing source or greater than or equal to 0.69 kilopascals at a new source. A Group 2 storage tank is a storage tank that does not meet the definition of a Group 1 storage tank. Fluoropolymers has one 4,600 gallon storage tank in the T1-T4 and T7 Area and one 2,600 gallon storage tank in the T5 Area subject to 40 C.F.R. 63, Subpart FFFF. Since these tanks have a capacity of less than 10,000 gallons, they are Group 2 and not subject to any control requirements.

#### Transfer Racks

40 C.F.R. §63.2550 defines a Group 1 transfer rack as a transfer rack that loads more than 0.65 million liters/year of liquids that contain organic HAP with a rack-weighted average partial pressure, as defined in 40 C.F.R. §63.111, greater than or equal to 1.5 pound per square inch absolute. A Group 2 transfer rack is defined as a transfer rack that does not meet the definition of a Group 1 transfer rack. In their NOCS, DuPont determined that the distillate loading pumps and hoses in the T1-T4 and T7 Area could be defined as a transfer rack, however, they are not loading liquids that contain an organic HAP as defined by 40 C.F.R. §63.101 and Table 2 to 40 C.F.R. 63, Subpart F, and would therefore not be defined as a transfer rack subject to the requirements of 40 C.F.R. §63.2475.

#### Equipment Leaks

Equipment in organic HAP service is subject to the requirements under 40 C.F.R. §63.2480 and Table 6 of 40 C.F.R. 63, Subpart FFFF. In organic HAP service is defined by 40 C.F.R. §63.2550 to mean a piece of equipment that either contains or contacts a fluid (liquid or gas) that is at least 5 percent by weight of total organic HAP. To demonstrate compliance with the requirements under 40 C.F.R. §63.2480 and Table 6 of

40 C.F.R. 63, Subpart FFFF, the permittee must comply with the requirements of either 40 C.F.R. 63, Subparts UU or H or 40 C.F.R. 63, Subpart F. In their NOCS Report, DuPont indicated that they will comply with the provisions of 40 C.F.R. 63, Subpart UU for the Fluoropolymers Business Unit.

#### Wastewater Streams

Wastewater is defined by 40 C.F.R. §63.2550 as water that is discarded from an MCPU or control device through a point of determination (POD) and that contains either: an annual average concentration of compounds in Tables 8 and 9 of 40 C.F.R. 63, Subpart F of at least 5 ppm<sub>w</sub> and has an annual average flowrate of 0.02 liters per minute or greater; or an annual average concentration of compounds in Tables 8 and 9 to 40 C.F.R. 63, Subpart FFFF of at least 10,000 ppm<sub>w</sub> at any flowrate. A Group 1 wastewater stream is a wastewater stream consisting of process wastewater at an existing or new source that meets the criteria for Group 1 status in 40 C.F.R. §63.2485(c) for compounds in Tables 8 and 9 of 40 C.F.R. 63, Subpart FFFF and/or a wastewater stream consisting of process wastewater at a new source that meets the criteria for Group 1 status in 40 C.F.R. §63.132(d) for compounds in Table 8 to 40 C.F.R. 63, Subpart G. A Group 2 wastewater stream is any process wastewater stream that does not meet the definition of a Group 1 wastewater stream. In their NOCS, DuPont stated that there were no Group 1 wastewater streams generated in the Fluoroproducts MCPUs.

Maintenance wastewater streams are subject to the requirements of 40 C.F.R. §63.105, except as specified in 40 C.F.R. §63.2485.

#### Heat Exchange Systems

There is one heat exchange system in the T1-T4 and T7 Area, but it is exempt from the heat exchange requirements of 40 C.F.R. §63.104 because it is operated with the minimum pressure on the cooling water side at least 35 kilopascals greater than the maximum pressure on the process side, meeting the exemption requirements of 40 C.F.R. §63.104(a)(1).

- 4) **Added boilerplate language for the boiler and process heater MACT (vacated rule 40 C.F.R. 63, Subpart DDDDD).** On July 30, 2007, the United States Court of Appeals for the District of Columbia Circuit vacated and remanded the Boiler MACT. As a result of the court's decision, a MACT for this source category will have to be implemented via a 112(j) case-by-case MACT determination or a subsequent 40 C.F.R. 63 proposal.

DuPont has engaged in a 112(j) "equivalent emission limitation by permit" application review process with the DAQ. Therefore, all boilers and process heaters located at this facility are subject to 112(j) "equivalent emission limitation by permit", including T1CA, T1CB, T1CC, T1CD, T5HA and T5HB, unless US EPA promulgates a standard pursuant to 40 C.F.R. 63 for industrial, commercial, institutional boilers and process heaters prior to a final decision and Title V permitting action by DAQ. The review and Title V permit incorporating the "equivalent emission limitation by permit" must be completed by the date a final rule for industrial, commercial, institutional boilers and process heaters pursuant to 40 C.F.R. 63 is specified in the order of the United States District Court for the District of Columbia, which is currently December 16, 2010.

- 5) **40 C.F.R. 63, Subpart ZZZZ – "National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines."** DuPont has a generator, Emergency Generator (T7JJ), subject to the requirements of 40 C.F.R. 63, Subpart ZZZZ. According to their Initial Notification Form, received on August 16, 2004, this unit is an emergency generator which, per 40 C.F.R. §63.6590(b)(1)(i), is not subject to the requirements of 40 C.F.R. 63, Subparts A and ZZZZ and is only subject to the initial notification requirements of 40 C.F.R. §63.6645(h). Since all applicable requirements under 40 C.F.R. 63, Subpart ZZZZ have been met, the placeholder language in Condition 7.1.17 of the initial Title V permit was removed.

- 6) **40 C.F.R. 63, Subpart NNNNN – “National Emissions Standards for Hazardous Air Pollutants: Hydrochloric Acid Production.”** The Fluoropolymers Business Unit is subject to the requirements of 40 C.F.R. 63, Subpart NNNNN. A facility is subject to the requirements of 40 C.F.R. 63, Subpart NNNNN if they own or operate an HCl production facility that produces a liquid HCl product at a concentration of 30 weight percent or greater during its normal operations. An affected source, according to 40 C.F.R. §63.8990(b) is each emission stream from an HCl process vent, storage tank, or transfer operation; and an emission stream resulting from leaks from equipment in HCl service. For each of these emission streams, the facility must comply with the emission limitations and work practice standards of 40 C.F.R. §63.9000(a) and Table 1 to 40 C.F.R. 63, Subpart NNNNN.

For each HCl process vent, storage tank, or transfer operation, the facility is required to comply with the applicable operating limit in 40 C.F.R. §63.9000(b) and Table 2 to 40 C.F.R. 63, Subpart NNNNN. Emissions from Subpart NNNNN affected Fluoropolymer vent streams are routed to Scrubber T2ERE and to the scrubber on the Thermal Converter (T7IMC). Table 2 to 40 C.F.R. 63, Subpart NNNNN and 40 C.F.R. §63.9025(e) require the permittee to maintain the daily average scrubber inlet liquid or recirculating liquid flow rate above the operating limit and to maintain the daily average scrubber effluent pH within the operating limits; or they may, as provided in 40 C.F.R. §63.9025(b), request approval, in accordance with 40 C.F.R. §63.8(f), to monitor parameters other than those specified in 40 C.F.R. §63.9025(e).

For T2ERE, DuPont requested approval of alternative operating limit parameters. This request was submitted in letters dated July 13, 2005 and October 5, 2005. On April 4, 2006, in a letter addressed to Robert L. Ritchie of DuPont Washington Works from Bernard E. Turlinski of EPA Region III, the following monitoring parameters were approved for Scrubber T2ERE:

- a. Scrubber base temperature at or below 82 °C (process instrument measurement), AND either #b or #c below being satisfied;
- b. Fresh water make-up to the top section of the scrubber, measured with a flow meter (process instrument measurement) at or above 1,000 pph. Inherent in the scrubber design, 1,000 pph liquid flow is the minimum required to assure proper wetting of the packing and, therefore, proper scrubbing; OR
- c. Operation of the recycle acid flow system, through a restricting orifice. The restriction orifice is designed to assure that proper pump operation will provide flow well above the minimum required flow to wet the scrubber packing under all operational scenarios. Therefore, verification of proper operation of the recycle acid pump is indicated by the pump power monitor installed upon the pump. For the column to be properly operated (with the packing wetted adequately) the power monitor must read above 1.4 amp minimum. This amp rating corresponds to the pump manufacturer's minimum recommended sustained flow rate for the pump.

Initial compliance testing for T2ERE was conducted in accordance with 40 C.F.R. §63.9010 on July 27- 28, 2005. Subsequent performance testing is required to be conducted on the earlier of the Title V operating permit renewal or within 5 years of issuance of the Title V permit as specified in 40 C.F.R. §63.9015 and condition 7.3.3 of the Title V permit, except as specified in 40 C.F.R. §60.9020(d).

The scrubber on the Thermal Converter (T7IMC) is subject the requirements of 40 C.F.R. 63, Subpart NNNNN when an alternative venting arrangement of emissions generated within the Tails Tower for Cooler Absorbers (T2XH and T2XL) is diverted from Scrubber T2ERC and routed to the Thermal Converter (T7IMC). During these venting episodes, DuPont will monitor the daily liquid flow rate and the daily average effluent pH. Since Method 26A testing for HCl and Cl<sub>2</sub> emissions was conducted on March 10, 2009 in accordance with the CISWI, DuPont has requested that this testing be used to satisfy the testing requirements under 40 C.F.R. 63, Subpart NNNNN. Even though the option of using previous test results is allowed by 40 C.F.R. 63, Subpart NNNNN as long as it was within the last 5 years, the Regulation requires that such testing be in accordance with all Subpart NNNNN requirements. In this case the only requirement that was not satisfied by the March 10, 2009 CISWI demonstration was the need to establish a



maximum pH operating limit. As a result, DuPont is working with EPA Region III and DAQ to obtain approval to base the maximum pH on an alternative test method such as a design evaluation instead of Method 26A testing. Since the alternative testing approach has not yet been approved, the operating limits for scrubber (T7IMC) have not yet been added to this Title V Permit. Once these parameters and the testing approach have been reviewed and approved by EPA Region III and DAQ, they should be included in the Title V Permit.

#### **40 C.F.R. 64 - Compliance Assurance Monitoring (CAM)**

According to 40 C.F.R. §64.2(a), CAM applies to a pollutant-specific emissions unit at a major source that is required to obtain a part 70 or 71 permit if the unit satisfies all of the following criteria: 1) The unit is subject to an emission limitation or standard for the applicable regulated air pollutant (or a surrogate thereof), other than an emission limitation or standard that is exempt under 40 C.F.R. §64.2(b)(1); 2) The unit uses a control device to achieve compliance with any such emission limitation or standard; and 3) The unit has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source. 40 C.F.R. §64.2(b)(1)(vi) exempts emission limitations or standards for which a part 70 or 71 permit specifies a continuous compliance determination method.

DuPont Washington Works conducted a review of their applicability to 40 C.F.R. 64 – “Compliance Assurance Monitoring” (CAM) for the Fluoropolymers Business Unit. Based on the information submitted, DuPont determined that the Fluoropolymers Business Unit is not subject to CAM because, as demonstrated in the following table, none of the control devices satisfy all of the criteria above required to be subject to CAM.

**CAM Applicability for Fluoropolymers**

<b>Process Area</b>	<b>Control Device</b>	<b>Is the unit subject to an emission limitation or standard other than one exempt under 40 C.F.R. §64.2(b)(1)? If yes, state pollutant(s).</b>	<b>Is the control device used to achieve compliance with such emission limitation or standard? If yes, state pollutant(s) controlled.</b>	<b>Does the unit have potential pre-control device emission of the applicable regulated air pollutant that are equal to or greater than the amount for a source to be classified as a major source?</b>	<b>Subject to CAM?</b>
C1P	C1CHC – Scrubber	Yes – PM <sub>10</sub> , HF	Yes - PM <sub>10</sub> , HF	No	No
	C1FEC – Scrubber	Yes – PM <sub>10</sub> , HF	Yes - PM <sub>10</sub> , HF	No	No
	C1FSC2 – Scrubber	Yes – PM <sub>10</sub> , APFO	Yes - PM <sub>10</sub> , APFO	No	No
	C1FSC3 – Scrubber	Yes – PM <sub>10</sub> , APFO	Yes - PM <sub>10</sub> , APFO	No	No
	C1GNC1 – Baghouse	Yes – PM <sub>10</sub> , HF	Yes - PM <sub>10</sub>	No	No
	C1GNC2 – Filter	Yes – PM <sub>10</sub> , HF	Yes - PM <sub>10</sub>	No	No
	C1GPC – Baghouse	Yes – TSP	Yes - TSP	No	No

Process Area	Control Device	Is the unit subject to an emission limitation or standard other than one exempt under 40 C.F.R. §64.2(b)(1)? If yes, state pollutant(s).	Is the control device used to achieve compliance with such emission limitation or standard? If yes, state pollutant(s) controlled.	Does the unit have potential pre-control device emission of the applicable regulated air pollutant that are equal to or greater than the amount for a source to be classified as a major source?	Subject to CAM?
C2	C2DJC – Bag Filter	Yes – PM <sub>10</sub> , VOC	Yes - PM <sub>10</sub>	No	No
	C2DKC – Bag Filter	Yes – PM <sub>10</sub> , VOC	Yes - PM <sub>10</sub>	No	No
	C2DSC – Bag Filter	Yes – PM <sub>10</sub>	Yes - PM <sub>10</sub>	No	No
	C2DWC2 - Scrubber	Yes - PM <sub>10</sub> , APFO	Yes - PM <sub>10</sub> , APFO	No	No
	C2DTC3 – Scrubber	Yes - PM <sub>10</sub> , APFO	Yes - PM <sub>10</sub> , APFO	No	No
	C2EGC – Bag Filter	Yes – PM <sub>10</sub> , VOC	Yes – PM <sub>10</sub>	No	No
	C2EHC2 - Scrubber	Yes - PM <sub>10</sub> , APFO	Yes - PM <sub>10</sub> , APFO	No	No
	C2EUC – Bag Filter	Yes – PM <sub>10</sub>	Yes – PM <sub>10</sub>	No	No
	C2KOC1 – Bag Filter	Yes – HF	Yes – HF	No	No
	C2KOC2 – Bag Filter	No	NA	NA	No
C3	C3HGC – Scrubber	Yes – PM <sub>10</sub>	Yes – PM <sub>10</sub>	No	No
	C3HPC – Scrubber	Yes – VOC, Fluorides, PM <sub>10</sub>	Yes – PM <sub>10</sub> , Fluorides	No	No
T5	T5HGC – Cyclone	Yes – PM, PM <sub>10</sub> , APFO	Yes – PM, PM <sub>10</sub>	No	No
	T5HIC – Cyclone	Yes – PM, PM <sub>10</sub> , ODC, APFO	Yes – PM, PM <sub>10</sub>	No	No
	T5HKC - Condenser	Yes – ODC	Yes - ODC	No	No
T6	T6IFC – Packed Bed Scrubber	Yes - PM <sub>10</sub> , APFO	Yes - PM <sub>10</sub> , APFO	No	No
	T6IZC – Deep Bed Filter	Yes - PM <sub>10</sub> , APFO	Yes - PM <sub>10</sub> , APFO	No	No
T1, T2, T3, T4, T7	T2ERC – Scrubber	Yes – VOC This control device is also subject to HCl emission limits, but HCl emissions are subject to the HCl MACT and are thus exempt under 40 C.F.R. §64.2(b)(1)(i).	No. This scrubber is used to control HCl emissions and HCl emission are exempt under 40 C.F.R. §64.2(b)(1)(i).	NA	No
	T7IOC – Baghouse	Yes – PM <sub>10</sub>	Yes – PM <sub>10</sub>	No	No
	T7JCC – Scrubber	Yes – HCl	Yes - HCl	No	No
	T7XIC – Scrubber	Yes - VOC This control device is also subject to Methanol and HCl emission limits, but the Methanol and HCl emissions are subject to the MON MACT and are thus exempt under 40 C.F.R. §64.2(b)(1)(i).	No. This scrubber is used to control Methanol and HCl emissions, but Methanol and HCl emission are exempt under 40 C.F.R. §64.2(b)(1)(i).	NA	No

Process Area	Control Device	Is the unit subject to an emission limitation or standard other than one exempt under 40 C.F.R. §64.2(b)(1)? If yes, state pollutant(s).	Is the control device used to achieve compliance with such emission limitation or standard? If yes, state pollutant(s) controlled.	Does the unit have potential pre-control device emission of the applicable regulated air pollutant that are equal to or greater than the amount for a source to be classified as a major source?	Subject to CAM?
T1, T2, T3, T4, T7	T7IMC – Thermal Converter and associated Scrubber	Yes – VOC, Chromium, and APFO. These control devices are also subject to CO, NO <sub>x</sub> , PM, SO <sub>2</sub> , Cadmium, Dioxins/Furans, HCl, Lead, and Mercury emission limits under 40 C.F.R. §§62.12155 through 62.12157 (CISWI); and HF, HCl, Methylene Chloride and Toluene emission limits under the MON MACT, therefore, they are exempt under 40 C.F.R. §64.2(b)(1)(i).	Yes – VOC and APFO. These devices are used to control PM, HCl, HF, Methylene Chloride, and Toluene but these emission limits are exempt under 40 C.F.R. §64.2(b)(1)(i).	Yes - VOC	No – Although these control devices are subject to an emission limitation for VOC, use a control device to meet those VOC emission limits, and pre-control device emissions of VOC are greater than 100 tpy; these control devices are exempt per 40 C.F.R. §64.2(b)(1)(vi) because a continuous compliance determination method for these control devices was already specified in the initial Title V permit, condition 7.1.5.

40 C.F.R. §64.1 defines inherent process equipment as equipment that is necessary for the proper or safe functioning of the process, or material recovery equipment that the owner or operator documents is installed and operated primarily for purposes other than compliance with air pollution regulations. Equipment that must be operated at an efficiency higher than that achieved during normal process operations in order to comply with the applicable emission limitation or standard is not inherent process equipment. Inherent process equipment is not considered a control device under 40 C.F.R. 64. DuPont has identified the following as inherent process equipment not subject to the requirements of CAM: C1FKC, C1FSC3, C1FSC1, C1GJC, C1GQC, C2DWC1, C2EHC1, C2ENC, C2EQC, and C2KPC.

### **Non-Applicability Determinations**

The following requirements have been determined not to be applicable to the subject facility due to the following:

- a. 40 C.F.R. 60 Subpart K - “Standards of Performance For Storage Vessels For Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978.” Tanks in the Fluoropolymer Production Unit containing petroleum liquids constructed, relocated, or modified during these dates have a storage capacity less than the applicability threshold.
- b. 40 C.F.R. 60 Subpart Ka - “Standards of Performance for Storage Vessels For Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984.” Tanks in the Fluoropolymer Production Unit containing petroleum liquids constructed, relocated, or modified during these dates have a storage capacity less than the applicability threshold.
- c. 40 C.F.R. 60 Subpart Kb - “Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984.” Tanks in the Fluoropolymer Production Unit containing volatile organic liquids constructed, relocated, or modified after July 23, 1984 have a storage capacity less than the applicability threshold.
- d. 40 C.F.R. 60 Subpart VV - “Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry.” Fluoroproducts facilities do not produce as intermediates or final products any of the materials listed in §60.489.
- e. 40 C.F.R. 60 Subpart DDD - “Standards of Performance for Volatile Organic Compound (VOC) Emissions from the Polymer Manufacturing Industry.” The Fluoroproducts production facilities do not manufacture polypropylene, polyethylene, polystyrene, or poly(ethylene terephthalate) for which this rule applies.
- f. 40 C.F.R. 60 Subpart NNN - “Standards of Performance for Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations.” The Fluoroproducts facilities do not have a process unit that produces any of the chemicals listed in §60.667 as a product, co-product, by-product, or intermediate.
- g. 40 C.F.R. 60 Subpart RRR - “Standards of Performance for Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes.” The Fluoroproducts facilities do not have a process unit that produces any of the chemicals listed in §60.707 as a product, co-product, by-product, or intermediate.
- h. 40 C.F.R. 61 Subpart V - “National Emission Standards for Equipment Leaks (Fugitive Emissions Sources).” Applies to sources in VHAP service as defined in §61.241. VHAP service involves chemicals that are not used in Fluoroproducts manufacture.

- i. 40 C.F.R. 63 Subpart H - “National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks.” 40 C.F.R. 63 Subparts F, G, and H do not apply to manufacturing process units that do not meet the criteria in §§63.100(b)(1), (b)(2), and (b)(3).
- j. 40 C.F.R. 63 Subpart JJJ - “National Emission Standards for Hazardous Air Pollutant Emissions: Group IV Polymers and Resins. Fluoroproducts manufacturing does not produce the materials listed in §63.1310.
- k. 40 C.F.R. 82 Subpart B - “Protection of Stratospheric Ozone.” Requires recycling of Chlorofluorocarbons (CFCs) from motor vehicles and that technicians servicing equipment need to be licensed. The Fluoroproducts production facility does not conduct motor vehicle maintenance involving CFCs on site.
- l. 40 C.F.R. 63, Subpart EEEE – “National Emission Standards for Hazardous Air Pollutants: Organic Liquids Distribution (Non-Gasoline).” Storage tank T5HY has a design capacity of less than 18.9 cubic meters (5,000 gallons) and is not required to be controlled under 40 C.F.R. 63, Subpart EEEE. It is only subject to the recordkeeping requirements of 40 C.F.R. §63.2343(a). Storage tank T7AA is an existing tank with a design capacity greater than or equal to 18.9 cubic meters (5,000 gallons) and less than 189.3 cubic meters (50,000 gallons) storing an organic liquid with an annual average true vapor pressure of the total Table 1 organic HAP in the stored organic liquid less than 27.6 kilopascals (4.0 psia). Since the annual average true vapor pressure of the total Table 1 organic HAP is less than 4.0 psia, this tank is not required to be controlled under 40 C.F.R. 63, Subpart EEEE and is only subject to the notification, recordkeeping, and reporting requirements of 40 C.F.R. §§63.2343(b)(1) through (3). The unloading systems MCE and MCS are used for unloading when maintenance or inspection is required and are not an affected source under 40 C.F.R. 63, Subpart EEEE as specified in 40 C.F.R. §63.2338(c)(3). Since the tanks do not require control and the unloading systems are not affected sources, 40 C.F.R. §63.2350(c) does not require DuPont to develop a written startup, shutdown, and malfunction (SSM) plan for the tanks or unloading systems. Also, since the equipment leak detection requirements of 40 C.F.R. §63.2346(c) only apply if the affected source has at least one storage tank or transfer rack that meets the applicability criteria for control in Table 2 of 40 C.F.R. 63, Subpart EEEE, and none of the tanks or transfer racks are required to be controlled, DuPont is not subject to the leak detection and repair requirements of 40 C.F.R. 63, Subpart EEEE.

### **Request for Variances or Alternatives**

None.

### **Insignificant Activities**

Insignificant emission unit(s) and activities are identified in the Title V application.

### **Comment Period**

Beginning Date:	September 27, 2010
Ending Date:	October 27, 2010

All written comments should be addressed to the following individual and office:

Carrie McCumbers  
Title V Permit Writer  
West Virginia Department of Environmental Protection  
Division of Air Quality  
601 57<sup>th</sup> Street SE  
Charleston, WV 25304

## **Procedure for Requesting Public Hearing**

During the public comment period, any interested person may submit written comments on the draft permit and may request a public hearing, if no public hearing has already been scheduled. A request for public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. The Secretary shall grant such a request for a hearing if he/she concludes that a public hearing is appropriate. Any public hearing shall be held in the general area in which the facility is located.

## **Point of Contact**

Carrie McCumbers  
West Virginia Department of Environmental Protection  
Division of Air Quality  
601 57<sup>th</sup> Street SE  
Charleston, WV 25304  
Phone: 304/926-0499 ext. 1226 • Fax: 304/926-0478

## **Response to Comments (Statement of Basis)**

A comment letter was received on October 29, 2010 from the law office of D. David Altman on behalf of their client, the Little Hocking Water Association. The comment letter and DAQ's response is provided in Attachment A to this Fact Sheet.

The only change made as a result of the comments from D. David Altman concerns the Emissions Summary Table in the Fact Sheet. While preparing the response to comments letter, the potential APFO emissions based on the 45CSR13 emission limits were totalled and compared to the Emissions Summary Table in the Fact Sheet. The Emissions Summary Table had the APFO potential emissions as 34.28 tons per year, while the potential emissions for all APFO sources in the Fluoropolymers Business Unit based on the 45CSR13 allowable emission limits were 1.93 tons per year. It was determined that this discrepancy was due to the basis DuPont used when calculating their potential emissions. DuPont calculated the potential emissions without considering controls and the potential emissions should have been calculated after taking controls into consideration if those controls are required by the 45CSR13 permit. The change to the potential APFO emissions in the Emissions Summary Table has no effect on any requirements in the Title V permit. This table is provided for informational purposes and is not a limit or standard.

During the draft/proposed comment period, DuPont requested the removal of emission sources T5HA and T5HB from the list of affected sources in condition 3.1.20. These emission sources do not meet the definition of process heaters and are therefore not subject to 40 C.F.R. 63, Subpart DDDDD because the gases for these units pass through the process material.

No comments were received from EPA Region III.

**Attachment A**  
**Response to Comments**

**FAX COVER SHEET**

**To: Carrie McCumbers WVDEP (304) 926-0478**

**Re: Comments for Proposed Permit to Operate  
(PTO) issued to I. E. DuPont de Nemours & Co.  
(DuPont) pursuant to Title V of Clean Air Act**

These comments have been revised to correct certain  
formatting and editing errors. Please substitute these  
comments for those previously sent. The comments have not  
been substantively changed.



**D. David Altman Co.**  
a legal professional association

\* Carrie McCumbers  
Title V Permit Writer  
West Virginia Dept. of Environmental Protection  
Division of Air Quality  
601 57th Street SE  
Charleston, WV 25304

October 29, 2010

To Carrie McCumbers:

These preliminary comments to the Proposed Permit to Operate ("PTO"), issued to E.I. du Pont de Nemours & Co. ("DuPont") pursuant to Title V of the Clean Air Act ("CAA"), are being submitted on behalf of our client, the Little Hocking Water Association ("LHWA"). They are not substantively different than the comments filed earlier today. Certain formatting errors have been corrected.

As a general matter, LHWA questions why the Proposed PTO allows APFO emissions in light of DuPont's assertions that APFOs are being phased out and representations that APFO emissions have been virtually eliminated. Furthermore, the Proposed PTO does not give a complete picture of the emissions and handling of APFO. First, the Proposed PTO does not contain sufficient inspection requirements for equipment or compliance assurance monitoring (i.e. parameter monitoring) to show that APFO limits are being met. Second, the Proposed PTO does not address fugitive emissions of APFO. Finally, the Proposed PTO does not address the fate of materials collected by scrubbers, to the extent that scrubbers are the designated control method.

Also, the expired PTO contained a certification of data accuracy; however, Attachment C to Appendix A does not contain such a certification of data accuracy. This certification should be included in any final PTO.

This Proposed PTO appears to cover five processing areas that contain a total of thirteen "emission points" for APFO in the fluoropolymers business unit of the Washington Works Plant. According to the chart on page 30 of the Proposed PTO, the processing areas are: CIP, C2, T5, T6, and T7. These comments will address the Proposed PTO's provisions by processing area.

#### CIP Area

In processing area CIP, the APFO emission point appears to be CIFSE. According to Table 4.1.1 of the Proposed PTO, there are two sources that vent to that emission point - a dryer (CIFS) and a conveying system (CIFK). Table 4.1.1 seems to list the control devices used for each of these sources (i.e. baghouses and scrubbers). Table 4.2.2.a seems to list compliance

Ms. Carrie McCumbers  
October 29, 2010  
Page 2 of 4

monitoring for these control devices. The monitoring requirements purport to ensure that DuPont is meeting the emission limits. However, the permit's compliance monitoring requirements for the scrubbers that are on the APFO sources are not targeted to support assurance of compliance with emissions limits. Rather, the monitoring requirements are designed to detect only gross failures of operations (for example, the dryer scrubber C1FSC2 will shut down by a specified drop in pressure). The permit contains no monitoring requirements that would ensure that DuPont is in compliance with its emission limits. Also, the permit does not address what happens to the emissions if the scrubber shuts down. The Proposed PTO should contain a provision that ensures DuPont's compliance with these emission limits, and should address the procedure for malfunctions and shut downs.

With respect to the testing requirements under process area C1P, the permit contains no information about the test methods to be used for compliance testing. Further, it appears that section 4.3.1 of the Proposed PTO only requires one compliance test, not regular testing. The Proposed PTO should require regular testing.

The permit requires that DuPont maintain and operate all control devices in the C1P area "in accordance with proper operational guidelines to minimize emissions." This is entirely too vague. There needs to be a provision that requires DuPont to perform regular inspections of the control devices.

According to section 4.4.3 of the Proposed PTO, DuPont must maintain records for the purpose of determining compliance with emission limits. It is unclear whether this section constitutes a monitoring requirement to ensure that DuPont is complying with emission limits. This section makes it appear that the maintenance of records controls the entire field of compliance demonstration. However, compliance should be determined by testing, monitoring and other related assurances. Therefore, this section should not be considered an absolute compliance demonstration, but should be integrated with testing and other requirements such as parameter monitoring. Additionally, stack testing which averages the results of three 3-hour test runs are improper. Monitoring should be either continuous emission monitoring, or monitoring of parameters to make sure they are consistent with the last stack test (i.e. ensuring parameters are within what was measured at the last successful stack test).

For the above stated reasons, all these features of the Proposed PTO in regard to the C1P Area are inadequate, and these deficiencies need to be addressed in subsequent revisions to the Proposed PTO.

#### C2 Area

In processing area C2, the APFO emission point appears to be C2DTE. According to Table 5.1.5 and Page 6 of the Proposed PTO, there are two sources that vent to that emission point - two dryers (C2DW and C2EH). The chart on Page 6 of the permit would seem to list the

Ms. Carrie McCumbers  
October 29, 2010  
Page 3 of 4

control devices used for each of these sources. Section 5.2.4 and Table 5.2.4 appear to list compliance monitoring for these control devices. The comments here are the same as above: the compliance monitoring only shows gross failures, not general compliance with emission limits. The monitoring requirements should be revised to include monitoring requirements that ensure compliance with emission limits.

Also, as for process area C1P, the permit only requires one compliance test, not regular testing, pursuant to section 5.3.3. This is inadequate.

Finally, Table 5.2.1 indicates that the control efficiency listed in that table does not reflect the ability of the device to capture and control APFO emissions. It seems that nothing in the Proposed PTO has a control efficiency for APFO. It is improper to contend that a facility's compliance with a 20% opacity limit demonstrates that the facility is complying with 99% control efficiency. Control efficiency should be determined by how much of the targeted emissions are captured by the control device once the emissions reach the control device.

For the above stated reasons, all these features of the Proposed PTO in regard to the C2 Area are inadequate, and these deficiencies need to be addressed in subsequent revisions to the Proposed PTO.

#### T5, T6, and T7 Areas

Table 3.1.12 lists two APFO emission points in processing area T5: T5HGE and T5HIE. There appears to be one source that vents APFO to T5HGE – T5HG (a dryer). There is one source that vents APFO to T5HIE – T5HI (a dryer). Table 8.1.1 appears to list the control devices for those sources. Per Table 8.1.1, the only control device listed for each of these sources is a cyclone. However, cyclones are capable of controlling only large particles. Therefore, the Proposed PTO should have a requirement to install a fabric filter with the cyclone to capture the finer particles that do not settle out in the cyclone.

Also, under section 8.3.1, there appears to be no testing requirements. Section 8.3.1, the provision under "Testing Requirements," simply states "None." The Proposed PTO should include provisions that require testing to ensure that DuPont is in compliance with applicable and appropriate emission limitations.

As in areas C1P and C2, the compliance monitoring for T5 under section 8.2.2 only addresses gross failures. The requirements are also too vague to determine what is being monitored in the cyclone. Therefore, T5HGE and T5HIE are essentially uncontrolled APFO emission points. The Proposed PTO must include provisions which govern the control of APFO emission points in process area T5.

Ms. Carrie McCumbers  
October 29, 2010  
Page 4 of 4

According to Table 3.1.12., there are eight APFO emission points in processing area T6. Each of the eight emission points appears to have one or more sources that vent APFO to the emission point. Five of the eight emissions points do not have control devices, as evident from Table 9.1.5. With respect to one source – T6IV – there appears to be an alternate operating scenario, where, under some circumstances emissions would be vented to one emission point with some controls. However, under other circumstances, emissions would be vented to another emission point with no controls. The terms of the permit are too vague to determine the circumstances under which emissions are sent to the controlled emission point or to the uncontrolled emission point. Consequently, it would be impossible to determine when emissions are being controlled.

Again, there are no testing requirements other than a single start-up test. Furthermore, there is no compliance assurance monitoring to show that APFO limits are being met in the T6 area. The Proposed PTO should include regular testing requirements, and adequate monitoring to ensure that APFO limits are met.

Finally, Table 3.1.12 indicates one APFO emission point in processing area T7: T7IME. Section seven of the permit, addressing processing area T7, is different from the rest of the permit because it provides more detail about stack testing, making this section of the permit the only section that resembles modern permits. This section refers to federal regulations, and the parameter monitoring is much more comprehensive. However, section seven still provides no stack testing requirement for APFO. In fact, it appears that no testing at all is required in this process area. The Proposed PTO should include provisions that require testing to ensure that DuPont is in compliance with applicable emission limitations.

The comments and concerns contained in this letter should be addressed by the Proposed PTO to ensure that the goals and purposes of the Clean Air Act are being met. We look forward to hearing your response.

Sincerely,



D. David Altman



west virginia department of environmental protection

Division of Air Quality  
601 57<sup>th</sup> Street SE  
Charleston, WV 25304  
Phone 304/926-0475 • FAX: 304/926-0479

Randy C. Huffman, Cabinet Secretary  
[www.dep.wv.gov/daq](http://www.dep.wv.gov/daq)

December 1, 2010

Certified Mail  
91 7108 2133 3938 5268 1637

Mr. D. David Altman  
15 E 8<sup>th</sup> Street, Suite 200  
Cincinnati, OH 45202

RE: Response to Comment Letter  
E. I. du Pont de Nemours and Company  
Washington Works  
Permit No. R30-10700001-2010 (Part 2 of 14)

Dear Mr. Altman:

The comments you provided on behalf of your client, the Little Hocking Water Association, were received on October 29, 2010. The following is a response to those comments.

While APFO emissions have not been eliminated, they have been reduced significantly since Consent Order GWR-2001-019 became effective. Condition X.2 of Consent Order GWR-2001-019 required DuPont to reduce ammonium perfluorooctanoate (APFO) emissions to the air and discharges to the water, collectively, by 50% from actual 1999 levels by December 31, 2003. Since 2000, the actual annual APFO air emissions have been reduced by more than 98%; while the total potential emissions overall for the facility are currently 2.22 lbs/hr and 1.94 tons/year based on the 45CSR13 permitted limits.

Per condition X.1 of Consent Order GWR-2001-019, DuPont is required to submit to the Division of Air Quality (DAQ) quarterly reports of the actual APFO emissions to the air. The following table provides the actual air emissions of APFO reported each year since 2000 and shows how emissions have been reduced.

Promoting a healthy environment.

Reporting Period	Actual APFO Emissions Reported <sup>1</sup>	
	lbs	tons
2000	31,250	15.63
2001	26,125	13.06
2002	14,478	7.24
2003	6,109.4	3.05
2004	3,404.1	1.70
2005	148.84	0.07
2006	277.4	0.14
2007	310.8	0.16
2008	425.39	0.21
2009	277.47	0.14
2010 (Year-to-date including 3 <sup>rd</sup> Quarter)	142.57	0.07

<sup>1</sup>Includes actual emissions from Fluoropolymers (Part 2 of 14) and Research and Development (Part 11 of 14).

As for fugitive emissions, DuPont handles APFO as a water solution in order to eliminate fugitive dust emissions. They have identified all known sources of APFO air emissions at their facility and these are all point sources. APFO emission sources have been identified in both the Fluoropolymers Manufacturing Unit (Part 2 of 14) and Research and Development (Part 11 of 14).

Materials collected by the scrubbers would be in a water solution and are sent to another part of the plant for recovery and reuse. This Title V permit only covers air emissions and their associated rules and regulations and does not apply to any water emissions containing APFO.

A certification of data accuracy statement is included in the record keeping forms for R13-2365D, R13-1953G, and R13-0815F; and was included in Appendices A, C, and G of the initial Title V Permit for Fluoropolymers (Part 2 of 14). However, in order to reduce redundancy in the renewal permit, these forms were excluded. The Title V renewal permit only includes the basic record keeping forms which show the data to be collected. The underlying record keeping requirements in the permit have remained unchanged and if these records were required under the specific 45CSR13 permit to be certified by a responsible official, that requirement is still stated as such. Also, condition 3.5.1 states that "any application form, report, or compliance certification required by this permit to be submitted to the DAQ and/or USEPA shall contain a certification by the responsible official that states that based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate and complete." Therefore, while the various certification of data accuracy statements that were once included in the appendices of the initial Title V permit are no longer included in the appendices in the Title V renewal permit, all records are required to be certified by a responsible official in accordance with condition 3.5.1 whether or not a separate form existed in the underlying 45CSR13 permit.

A Title V operating permit issued under 45CSR30 includes all applicable requirements that apply to the source at the time of permit issuance. These applicable requirements are typically from permits issued under 45CSR13 (ex. R13-####), state rules, federal regulations, and consent orders. If monitoring, testing, record keeping, and/or reporting already exist and sufficiently demonstrate compliance with the applicable requirements, no additional requirements are added unless the emission source triggers compliance assurance monitoring (CAM) under 40 C.F.R. 64. If the emission source is subject to CAM, then additional monitoring is added. If during the course of the Title V review, it is determined that the existing monitoring, testing, record keeping, and/or reporting is not adequate to demonstrate compliance, and the facility does not trigger CAM, then additional monitoring, testing, record keeping, and/or reporting requirements are added per 45CSR§30-5.1.c.

According to 40 C.F.R. §64.2(a), CAM applies to a pollutant-specific emissions unit at a major source that is required to obtain a part 70 or 71 permit if the unit satisfies all of the following criteria: 1) The unit is subject to an emission limitation or standard for the applicable regulated air pollutant (or a surrogate thereof), other than an emission limitation or standard that is exempt under 40 C.F.R. §64.2(b)(1); 2) The unit uses a control device to achieve compliance with any such emission limitation or standard; and 3) The unit has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source. Since APFO emissions are a non-HAP particulate, CAM would only apply to APFO emission sources which use a particulate matter control device and have pre-control device emissions of all particulate from that source greater than 100 tons/yr. None of the APFO emission sources in Fluoropolymers (Part 2 of 14) were subject to CAM requirements.

APFO emissions limits, along with the modeling requirements and screening levels specified in Consent Order GWR-2001-019, are provided under R13-2365D, R13-1953G, R13-1823I, R13-1353D, and R13-0815F. There are currently no federal regulations for APFO emissions; APFO is not a hazardous air pollutant (HAP); and the APFO emission sources are not subject to CAM requirements. Since the only applicable requirements which apply to APFO emission sources at the Washington Works facility are the requirements under R13-2365D, R13-1953G, R13-1823I, R13-1353D, and R13-0815F, additional monitoring, testing, record keeping, and/or reporting would only be added per 45CSR§30-5.1.c if adequate monitoring, testing, record keeping, and/or reporting is not already specified in the 45CSR13 permits.

For each APFO emission source, an explanation and answer to your questions will be provided by process area as was structured in your comment letter.

### C1P Area

There is one emission point in the C1P Area with APFO emission limits. This emission point is C1FSE and the emission sources, APFO emission limits, and 2009 actual APFO emissions are as follows:

Emission Point	Source Description	Pollutant	Emission Limit		2009 Actual Emissions ton/yr
			lb/hr	ton/yr	
C1FSE	C1FS (Dryer)	APFO	0.220	0.543	0.007
	C1FK (Conveying System)				

Condition 4.2.2 specifies operating parameters for control devices in the C1P Area and includes requirements for Baghouse C1FSC1, Bag Filter C1FKC, and Scrubbers C1FSC2 and C1FSC3. According to the application forms submitted with the Title V renewal, APFO emissions are controlled by Scrubbers C1FSC2 and C1FSC3. Baghouse C1FSC1 and Bag Filter C1FKC are inherent process equipment used to remove PM<sub>10</sub> and TSP in order to protect downstream equipment. In the case of C1FS (Dryer), emissions are first routed to C1FSC1 (Baghouse) which reduces PM<sub>10</sub> and TSP emissions; then to C1FSC2 (Scrubber) which reduces PM<sub>10</sub>, TSP, and APFO emissions; and finally to C1FSC3 (Scrubber) which controls PM<sub>10</sub>, TSP, and APFO emissions. Emissions from C1FK (Conveying System) first go to C1FKC (Bag Filter) which reduces PM<sub>10</sub> and TSP emissions; and finally to C1FSC3 (Scrubber) which controls PM<sub>10</sub>, TSP, and APFO emissions.

Since the comments submitted concern APFO emissions, I'll address only Scrubbers C1FSC2 and C1FSC3. For C1FSC2, DuPont is required by condition 4.2.2 to continuously monitor the pressure drop across the 1 micron filter in the recirculating liquid line and the exit gas temperature using a Distributed Control System (DCS). If the pressure drop exceeds 20 psig or the exiting gas temperature falls below 70 °C, the feed to C1FS (Dryer) will be shut down. For C1FSC3, condition 4.2.2 limits the minimum water flow rate to the scrubber spray nozzles to 0.3 gpm. As with C1FSC2, this parameter is measured continuously by a DCS. If the minimum water flow rate is not being met, the feed to the dryer will not start. Please note that the scrubbers do not shut down if the operating parameters fall outside the limits, the source of the emissions shut down (dryer and conveying system).

In the comments submitted, you imply that the monitoring requirements in condition 4.2.2 are designed to detect only gross failures of operation. This is not the case. Continuous readings are taken for the scrubber system (C1FSC2/C1FSC3) of the scrubber pressure drop, exit gas temperature, and water flow rate to the scrubber spray nozzles. The values which trigger the dryer interlock are based on design evaluations and testing conducted on the scrubber system. Instead of only specifying the operating parameter limit and then requiring continuous monitoring as would be the case for an NSPS or MACT, condition 4.2.2 specifies the operating parameter and requires continuous monitoring, but it also interlocks the dryer feed such that operation cannot continue if the operating parameter limits are not being met.



Testing on the scrubber system (C1FSC2/C1FSC3) was conducted on November 30, 2004 and again on January 25, 2007 in order to comply with the testing requirements specified in condition 4.3.1 (R13-2365D, B.6). The APFO emission rate from the January 25, 2007 performance test for emission point C1FSE averaged over three runs was 0.01 lb/hr. These results were the average of three 1-hour tests and not three 3-hour tests as stated in your letter. Most federal regulations require an initial test unless there is a change in production rate or other operating conditions; and the testing consists of three 1-hour tests. The requirement from R13-2365D is similar in that sense. A test protocol must be submitted prior to testing to ensure the appropriate test methods are being used.

Additional means of compliance with the R13-2365D emission limits (condition 4.1.1) include the following record keeping required under R13-2365D: 1) Records of maintenance activities, malfunctions, and operational shutdowns as specified in conditions 4.4.2 and 4.4.4; 2) Records of the maximum hourly, monthly, and annual APFO emissions as specified in condition 4.4.3; and 3) Monthly summary records as specified in condition 4.4.5 of the maximum and minimum values of the operating parameters for each control device listed in condition 4.2.2. These records were required under R13-2365D, conditions A.7, B.1, B.4, and B.5 and incorporated into the Title V permit.

Since R13-2365D already provided multiple methods of demonstrating compliance with the 0.220 lb/hr and 0.543 tons/yr APFO emission limits through continuous monitoring of the control devices, testing, and record keeping, additional requirements were not added per 45CSR§30-5.1.c.

#### C2 Area

There is one emission point in the C2 Area with APFO emission limits. This emission point is C2DTE and the emission sources, APFO emission limits, and 2009 actual APFO emissions are as follows:

Emission Point	Source Description	Pollutant	Emission Limit		2009 Actual Emissions ton/yr
			lb/hr	ton/yr	
C2DTE	C2DW (Dryer)	APFO	0.452	0.983	0.009
	C2EH (Dryer)				

According to the application forms submitted with the Title V renewal, APFO emissions from C2DW (Dryer) are controlled by Scrubbers C2DWC2 and C2DTC3. Bag Filter C2DWC1 is an inherent device used to remove PM<sub>10</sub> and TSP in order to protect downstream equipment. Emissions from C2DW (Dryer) are first routed to C2DWC1 (Bag Filter) which reduces PM<sub>10</sub> and TSP emissions; then to C2DWC2 (Scrubber) which reduces PM<sub>10</sub>, TSP, and APFO emissions; and finally to C2DTC3 (Scrubber) which controls PM<sub>10</sub>, TSP, and APFO emissions. This is also the case with C2EH (Dryer) where emissions first go to C2EHC1 (Bag Filter) which reduces PM<sub>10</sub> and TSP emissions; then to C2EHC2 (Scrubber) which reduces PM<sub>10</sub>, TSP, and APFO emissions; and finally to C2DTC3 (Scrubber) which controls PM<sub>10</sub>, TSP, and APFO emissions.

Since the APFO control devices are Scrubbers C2DWC2, C2EHC2, C2DTC3, I'll discuss only the monitoring, testing, and record keeping associated with these devices. The same basic response applies to these scrubbers as does the ones in the C1P Area. These scrubbers are interlocked, and a continuous monitoring system monitors the operating parameters as specified in condition 5.2.4. If the operating parameters fall outside of the operating limits specified in condition 5.2.4, the feed to the dryers is shut down. These operating parameters are based on design evaluations and testing to demonstrate that the control devices are operating properly. The operating limits are not set to detect only gross failures.

In addition to continuous monitoring of the scrubbers, condition 5.4.1 requires DuPont to maintain records and perform monthly calculations of the maximum hourly and total annual emissions associated with the operation of all affected sources; and also to record and document all operating parameters and production records used to calculate the monthly emissions.

Testing was conducted on November 29, 2004 in order to comply with the initial testing requirements specified in condition 5.3.3 (R13-1953G, 4.3.3). The APFO emission rate for emission point C2DTE averaged over three runs was 0.0004 lb/hr. Additional testing will be required under condition 5.3.3 if the 60-minute average production rate exceeds 120% of the rate demonstrated during the most recent test. A test protocol is required to be submitted prior to testing.

Condition 5.2.1 is an applicable requirement from R13-1953G. As stated above, C2EHC1 and C2DWC1 do not control APFO. This requirement applies to PM emission and opacity limits and states in footnote b that for C2EHC1 and C2DWC1 compliance shall be demonstrated through condition 5.2.4 which includes the table with control device operating parameter limits, continuous monitoring of those parameters, and process interlocks.

#### T5Area

There are two emission points in the T5 Area with APFO emission limits. These emission points are T5HGE and T5HIE and the emission sources, APFO emission limits, and 2009 actual APFO emissions are as follows:

Emission Point	Source Description	Pollutant	Emission Limit		2009 Actual Emissions ton/yr
			lb/hr	ton/yr	
T5HGE	T5HG (#1 Dryer)	APFO	0.022	0.04	0.007
T5HIE	T5HI (#2 Dryer)	APFO	0.028	0.03	0.002

According to the Title V permit application, the cyclones (T5HGC and T5HIC) do not control APFO emissions and control PM and PM<sub>10</sub> emissions. These cyclones also have interlocks to shut down operation of the dryers if conditions exceed the preset alarm levels as specified in condition 8.2.2.

Uncontrolled APFO emissions from these dryers are 0.022 lb/hr and 0.04 ton/yr for Dryer T5HG and 0.028 lb/hr and 0.03 ton/yr for T5HI. Condition 8.4.2 (R13-1353D, B.5) requires DuPont to maintain monthly records of the average hourly and annual emissions from each of these emission points. Additional controls were not required for APFO emissions in R13-1353D and it is not the responsibility of the Title V permit to require such controls. If there is no adequate monitoring, testing, record keeping, and/or reporting already in place to demonstrate compliance with a limit or standard, those can be added under Title V. In light of the record keeping already specified in R13-1353D (condition B.5) and the low APFO emission limits, it was determined that the addition of monitoring, testing, record keeping, and/or reporting requirements per 45CSR§30-5.1.c was not necessary.

#### T6 Area

The following table provides the APFO emission limits and 2009 actual APFO emissions for the affected sources in the T6 Area:

Emission Point	Source Description	Control Device	Pollutant	Emission Limit		2009 Actual Emissions ton/yr
				lb/hr	ton/yr	
T6PME	T6IW (#1 Float Tank)	None	APFO	0.00003	0.0001	0.0001
T6IGE	T6IG (#2 Float Tank)	None	APFO	0.0001	0.0003	0.0003
	T6IH (#3 Float Tank)					
T6IZCE	T6IV (#1 Dryer) T6IE (#2 Dryer) T6IF (#3 Dryer)	T6IFC (Scrubber) T6IZC (Deep Bed Filter)	APFO	0.248	0.325	0.11
T6IVE	T6IV (#1 Dryer)	None	APFO	0.414	0.004	0
T6IEE	T6IE (#2 Dryer)	None	APFO	0.414	0.003	0
T6IFE	T6IF (#3 Dryer)	None	APFO	0.414	0.003	0
T6IXE	T6IX (#1 Chiller Cooler Vent)	None	APFO	1x10 <sup>-7</sup>	4x10 <sup>-7</sup>	0
T6IYE	T6IY (#3 Chiller Cooler Vent)	None	APFO	1x10 <sup>-7</sup>	4x10 <sup>-7</sup>	0
	T6IY (#3 Chiller Cooler Vent)	None				

Each of the three dryers have a bypass where they can directly vent emissions from the dryer (emission points T6IVE, T6IEE, and T6IFE) and bypass the control devices (emission point T6IZCE). This bypass scenario is permitted for less than 2 hours per year per dryer. Emission limits from R13-0815F are 0.414 lb/hr and 0.004 ton/yr for T6IVE; 0.414 lb/hr and 0.003 ton/yr for T6IEE; and 0.414 lb/hr and 0.004 ton/yr for T6IFE. DuPont is required by condition 9.4.1 (R13-0815F, B.4) to maintain monthly records of production and to calculate hourly, monthly, and annual emission rates based on production records and operating parameters (which would include the number of hours of bypass). Other sources of APFO emissions that are uncontrolled (emission points T6PME, T6IGE, T6IXE, and T6IYE) also have very low R13-0815F permitted emission

limits as shown in the table above. As part of the requirements under condition 9.4.1, DuPont is also required to calculate hourly, monthly, and annual emissions for these sources. Since DuPont is required to maintain records of emissions for all emission points; has a very limited number of hours that the dryers (T6IV, T6IE, and T6IF) can bypass the controls; has low hourly and annual uncontrolled APFO emission limits for the dryer bypass scenarios (T6IVE, T6IEE, and T6IFE); and has low hourly and annual emissions for the other uncontrolled APFO emission sources (T6IW, T6IG, T6IH, T6IX, and T6IY) in the T6 Area, it was not justifiable to add monitoring, testing, record keeping, and/or reporting requirements per 45CSR§30-5.1.c.

Except during periods of bypass, emissions from Dryer #1 (T6IV), Dryer #2 (T6IE), and Dryer #3 (T6IF) are routed first to the Scrubber T6IFC and then to the Deep Bed Filter T6IZC. Condition 9.1.4 specifies operating parameter limits for both control devices and requires monitoring and record keeping of these parameters to demonstrate compliance. In addition, condition 9.4.1 requires records of the hourly, monthly, and annual emission limits; and condition 9.4.2 requires malfunction records to be maintained for these control devices.

Testing was conducted on August 13 and 15, 2004 in order to demonstrate compliance with the 45CSR13 emission limits for Dryer #1 (T6IV), Dryer #2 (T6IE), and Dryer #3 (T6IF). Additional testing will be required under condition 9.3.1 (R13-0815F, B.7) if the 60-minute average production rate exceeds 120% of the rate demonstrated during the most recent test.

#### T7Area

For the T7 Area, there is one APFO emission point, T7IME. The APFO emission limits specified in R13-1823I and the 2009 actual APFO emissions are as follows:

Emission Point	Source Description	Control Device	Pollutant	Emission Limit		2009 Actual Emissions ton/yr
				lb/hr	ton/yr	
T7IME	Thermal Converter Stack	T7IMC Scrubber	APFO	0.00037	$5 \times 10^{-7}$	0

APFO emissions from T7IME are regulated under R13-1823I and DuPont is required under condition 7.4.1 (R13-1823I, condition 4.4.4) to maintain records of APFO emissions in order to demonstrate compliance. Since APFO emission limits are 0.00037 lb/hr and  $5 \times 10^{-7}$  ton/yr, the record keeping specified in R13-1823I is adequate, and additional testing is not required. Also, it should be noted that while APFO emissions are not regulated under CISWI 111(d)/129, 40 C.F.R. 63, Subpart NNNNN (HCl MACT), and 40 C.F.R. 63, Subpart FFFF (MON MACT), this control device is subject to the requirements of these rules and has multiple monitoring, testing, record keeping, and reporting requirements in place to demonstrate that this control device is operating properly.

In conclusion, the only applicable requirements which could be incorporated in this Title V permit for Fluoropolymers (Part 2 of 14) were the requirements under Consent Order GWR-2001-019, R13-2365D, R13-1953G, R13-1823I, R13-1353D, and R13-0815F. The monitoring, testing, record keeping and reporting requirements included in the various 45CSR13 permits were determined to adequately demonstrate compliance with the APFO emission limits included in those permits; and, since there are no federal regulations for APFO emissions and the APFO emission sources are not subject to CAM, no additional monitoring, testing, record keeping, and/or reporting was included in the Title V permit.

The Division of Air Quality approved DuPont's Title V Renewal for the Fluoropolymers Business Unit, R30-10700001-2010 (Part 2 of 14), on December 1, 2010. A copy of the Final Fact Sheet and Final Permit are enclosed. Please note that any person whose interest may be affected, including, but not necessarily limited to, the applicant and any person who participated in the public comment process, by a permit issued, modified or denied by the Secretary may appeal such action of the Secretary to the Air Quality Board pursuant to article one [§§ 22B-1-1 et seq.], Chapter 22B of the Code of West Virginia as stated in West Virginia Code §22-5-14.

Sincerely,



Carrie McCumbers  
Title V Permit Engineer

Enclosures